# REPORT OF

# MISSOURI DEPARTMENT OF TRANSPORTATION AND HIGHWAY PATROL EMPLOYEES' RETIREMENT SYSTEM

## JUNE 30, 2011

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# INDEPENDENT AUDITORS' REPORT

The Board of Trustees
Missouri Department of Transportation and
Highway Patrol Employees' Retirement System

We have audited the accompanying statements of plan net assets of the Missouri Department of Transportation and Highway Patrol Employees' Retirement System (the System) as of June 30, 2011 and 2010, and the related statements of changes in plan net assets for the years then ended. These financial statements are the responsibility of the System's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with U.S. generally accepted auditing standards. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinions.

In our opinion, the financial statements referred to above present fairly, in all material respects, the plan net assets of the Missouri Department of Transportation and Highway Patrol Employees' Retirement System at June 30, 2011 and 2010, and the changes in plan net assets for the years then ended, in conformity with U.S. generally accepted accounting principles.

The management's discussion and analysis on pages 2 through 5 and the schedules of funding progress and employer contributions on pages 22 and 23 are not a required part of the basic financial statements but are supplementary information required by the Governmental Accounting Standards Board. The required supplementary information is the responsibility of management of the System. We have applied certain limited procedures, which consisted principally of inquiries of management regarding the methods of measurement and presentation of the required supplementary information. However, we did not audit the information and express no opinion on it.

Our audits were made for the purpose of forming an opinion on the financial statements taken as a whole. The supplementary information included on pages 24 through 26 is presented for purposes of additional analysis and is not a required part of the basic financial statements of the System. Such information has been subjected to the auditing procedures applied in the audits of the financial statements and, in our opinion, is fairly stated in all material respects in relation to the financial statements taken as a whole.

Williams-Keepers LLC

December 16, 2011

# MISSOURI DEPARTMENT OF TRANSPORTATION AND HIGHWAY PATROL EMPLOYEES' RETIREMENT SYSTEM

# MANAGEMENT'S DISCUSSION AND ANALYSIS

The management of the Missouri Department of Transportation and Highway Patrol Employees' Retirement System (the System, or MPERS) provides this discussion and analysis of the System's financial performance for the fiscal years ended June 30, 2011 and 2010. While this discussion is intended to summarize the financial status of MPERS, readers should consider this information in conjunction with the information that is furnished in the more detailed financial statements and corresponding notes.

## DESCRIPTION OF BASIC FINANCIAL STATEMENTS

As required by the Governmental Accounting Standards Board (GASB) accounting standards, this financial report consists of *Management's Discussion and Analysis* (this section), the basic financial statements (including notes to the basic financial statements), and other required supplementary information.

***Financial Statements*** report information about MPERS, using accounting methods similar to those used by private-sector companies, by using the economic resources measurement focus and accrual basis of accounting. These statements provide both long-term and short-term information about the System's overall financial status. These statements follow this *Management's Discussion and Analysis* section:

- The *Statement of Plan Net Assets* includes all the System's assets and liabilities, with the difference between the two reported as net assets.
- The *Statement of Changes in Plan Net Assets* accounts for all the current year's additions (income) and deductions (expenses), regardless of when cash is received or paid.

***Notes to the Financial Statements*** are included following the financial statements. The notes to the financial statements provide additional information that is essential for a full understanding of the data provided in the financial statements.

***Required Supplementary Information*** follows the notes and further supports the information in the financial statements.

## ANALYSIS OF FINANCIAL POSITION AND RESULTS OF OPERATIONS

Overall, the financial position of MPERS improved by $243 million, reported as the "change in net assets." This is primarily a result of net appreciation in the fair value of investments for the year ended June 30, 2011. With this net increase in value in FY11, the funded status of the plan showed an increase of 1.06%.

The following schedules present summarized comparative data from the System's financial statements for the fiscal years ended June 30, 2011, 2010, and 2009. Following each schedule is a brief summary providing explanation and analyses of the major reasons for changes in the condensed financial statements.

*Summarized Comparative Statements of Plan Net Assets*

| | As of June 30, 2011 | As of June 30, 2010 | As of June 30, 2009 | % Change 2011/2010 | % Change 2010/2009 |
|---|---|---|---|---|---|
| Cash and Receivables | $37,735,045 | $90,675,162 | $9,940,482 | -58% | 812% |
| Investments | 1,548,229,721 | 1,299,366,338 | 1,219,197,339 | 19% | 7% |
| Invested Securities Lending Collateral | 60,133,588 | 44,655,544 | 53,502,879 | 35% | -17% |
| Capital Assets | 3,287,289 | 3,276,526 | 1,659,247 | 0% | 97% |
| Other Assets | 6,794 | 5,155 | 8,535 | 32% | -40% |
| **Total Assets** | $1,649,392,437 | $1,437,978,725 | $1,284,308,482 | 15% | 12% |
| Accounts Payable | 32,898,778 | 78,491,744 | 8,299,374 | -58% | 846% |
| OPEB Obligation | 364,124 | 276,548 | 182,305 | 32% | 52% |
| Securities Lending Collateral | 60,339,959 | 45,986,723 | 54,692,943 | 31% | -16% |
| Long-Term Debt/Payable | 108,900 | 506,400 | 0 | -78% | 100% |
| **Total Liabilities** | $93,711,761 | $125,261,415 | $63,174,622 | -25% | 98% |
| **Total Net Assets** | $1,555,680,676 | $1,312,717,310 | $1,221,133,860 | **19%** | **7%** |

The decrease in cash and receivables is primarily attributable to lower investment sales receivables as of June 30, 2011. Some fluctuations in this area are normal, based on investment activity. The increase from FY09 to FY10 is primarily attributable to higher investment sales receivables. The System was restructuring its investment portfolio to meet new target allocations.

The System's investments represent the main component of total assets. These investments include holdings of stock, government-sponsored enterprises, bonds, mortgages, real estate, timber, securities lending collateral, limited partnerships, and other fixed income investments. The increase in fair value of investments as of June 30, 2011 is due to very favorable market conditions experienced during FY11. The FY11 investment return was 21.8%. Market conditions in FY10 reflected the start of more favorable conditions, as shown by the increase from the fair value amount of June 30, 2009 to that of June 30, 2010. The FY10 investment return was 12.91%. Detailed information regarding MPERS' investment portfolio is included in the *Investment Section* of this report.

Capital assets increased very slightly in FY11, due to the purchase of equipment in the normal course of business. The increase in capital assets from FY09 to FY10 can be attributed to the completion of the initial phase of the technology project MPERS has in progress. Costs associated with the project have been capitalized. All three modules of phase I of the project have been fully implemented and are now depreciable.

The largest component of liabilities is securities lending collateral. This represents the amount owed for collateral to be returned as the result of securities lent. The increase in securities lending collateral from FY10 to FY11 is due to the increase in the fair value of investments. The decrease in securities lending collateral from FY09 to FY10 is primarily due to a reduction in the lendable securities as MPERS increased its exposure to alternative investments. The corresponding securities lending collateral asset is valued at lower amounts at June 30, 2011, 2010 and 2009 due to the market value of the securities on loan being less than the par value. This is a residual effect of the liquidity crisis that was one aspect of the overall market downturn in FY09.

The decrease in accounts payable for FY11 is primarily attributable to lower investment purchases payable. Some fluctuations in this area are normal, based on investment activity. The large increase in from FY09 to FY10 is primarily attributable to larger investment purchases payables. The System was restructuring its investment portfolio to meet new target allocations.

The decrease in long-term debt/payable reflects the payment made on the obligation for the technology project. The increase in long-term debt/payable from FY09 to FY10 is due to the completion and capitalization of assets for the technology project. Remaining payments for the project will be made over the next two years. The amount shown at June 30, 2011 represents the payment amount for FY13.

The OPEB obligation of $364,124 at June 30, 2011, $276,548 at June 30, 2010, and $182,305 at June 30, 2009 represents a liability recorded pursuant to GASB Statement No. 45, which was implemented in FY08. This liability reflects the system's provision of postemployment health care benefits through its participation in the MoDOT and MSHP Medical and Life Insurance Plan. As allowed by the GASB, this reporting requirement is being implemented prospectively, as prior years' data is not available. This plan is an internal service fund of MoDOT; therefore, assets have not been set aside. With this, the increases from FY10 to FY11 and from FY09 to FY10 are expected.

The System's combined net assets were $1.556 billion at June 30, 2011, a $243 million increase from the $1.313 billion at June 30, 2010. This increase is an addition to the increase of the previous year, when net assets increased $92 million from the June 30, 2009 amount of $1.221 billion to the June 30, 2010 amount of $1.313 billion.

***Summarized Comparative Statements of Changes in Plan Net Assets***

| | Year Ended June 30, 2010 | Year Ended June 30, 2010 | Year Ended June 30, 2009 | % Change 2011/2010 | % Change 2010/2009 |
|---|---|---|---|---|---|
| Contributions | $168,130,790 | $124,476,706 | $123,043,301 | 35% | 1% |
| Net Investment Income (Loss) | 279,612,052 | 166,307,054 | (426,265,311) | 68% | -139% |
| Other Income | 33,141 | 33,145 | 33,571 | 0% | -1% |
| **Net Additions (Loss)** | $447,775,983 | $290,816,905 | ($303,188,439) | 54% | -196% |
| Benefits | $202,153,768 | $196,721,274 | $192,013,250 | 3% | 2% |
| Administrative Expenses | 2,658,849 | 2,512,181 | 2,339,501 | 6% | 7% |
| **Total Deductions** | $204,812,617 | $199,233,455 | $194,352,751 | 3% | 3% |
| Change in Net Assets | $242,963,366 | $91,583,450 | ($497,541,190) | 165% | -118% |
| Net Assets-Beginning | 1,312,717,310 | 1,221,133,860 | 1,718,675,050 | 7% | -29% |
| **Net Assets-Ending** | $1,555,680,676 | $1,312,717,310 | $1,221,133,860 | **19%** | **7%** |

The main component of the changes in contributions to MPERS is employer contributions. In FY11, MPERS received a transfer of contributions from MOSERS in the amount of $17,609,276, for Water Patrol member's service transferred. Also for FY11, the contribution rate for the non-uniformed Highway Patrol and MoDOT increased by 8.06%, and the contribution rate for the uniformed Highway Patrol increased by 9.58%, from the FY10 rates, therefore increasing the FY11 amount of employer contributions from the FY10 amount. For FY10, the contribution rate for the non-uniformed Highway Patrol and MoDOT increased by .68%, from the FY09 rate, therefore increasing the FY10 amount of employer contributions for that group from the FY09 amount.

Net investment income (loss), a primary component of plan additions, resulted in income of $280 million for FY11. This income is in addition to the FY10 gain of $166 million. The income represents a 21.8% return for the fiscal year ended June 30, 2011 which outperformed the policy benchmark by 5.1%. In comparison, the FY10 investment return was a 12.91%, which trailed the rate of return of the policy benchmark, but was slightly above the median in the peer universe comparison. Annual fluctuations within the broad investment markets are outside of the control of the System and are expected to fluctuate from year to year. The Board of Trustees has approved a diversified asset allocation that, over time, is expected to realize the assumed actuarial rate of investment return of 8.25%. Additional information regarding investments can be found in the *Investment Section* of this report.

Benefits increased primarily due to changes in benefit rolls for all of the years shown. Detailed schedules of changes can be found in the Actuarial Section of this report.

## CURRENTLY KNOWN FACTS AND RECENT EVENTS

Based on the June 30, 2010 actuarial valuation, the Board of Trustees approved a change in the required state contribution, effective July 1, 2011. The rate applied to non-uniformed payroll (MoDOT, civilian patrol, and MPERS) will increase from 39.46% to 45.45%. The rate applied to uniformed patrol payroll will increase from 49.53% to 58.63%. This increase is a residual effect of the unfavorable investment returns in FY09 and FY08.

Based on the June 30, 2011 actuarial valuation, the Board of Trustees approved an increase in the required state contribution, effective July 1, 2012. The rate applied to non-uniformed payroll (MoDOT, civilian patrol, and MPERS) will increase from 45.45% to 50.92%. The rate applied to uniformed patrol payroll will decrease from 58.63% to 55.03%. The increase in the non-uniformed rate is due to the decrease in number of employees by MoDOT, thus causing a significant decrease in covered payroll dollars. The decrease in the uniformed patrol rate is due to the increase in number of employees from the transfer in of Water Patrol employees, as well as the transfer in of funds from MOSERS for their liability.

## CONTACTING THE RETIREMENT SYSTEM'S MANAGEMENT

This financial report is designed to provide a general overview of the System's finances. Questions about this report or requests for additional financial information should be sent to:

MoDOT and Patrol Employees' Retirement System
PO Box 1930
Jefferson City, MO 65102-1930

# MoDOT AND PATROL EMPLOYEES' RETIREMENT SYSTEM

Jefferson City, Missouri

## STATEMENTS OF PLAN NET ASSETS

As of June 30, 2011 and 2010

| | 2011 | 2010 |
|---|---|---|
| **ASSETS:** | | |
| Cash | $ 34,434 | $ 210,007 |
| Receivables | | |
| Contributions | 6,057,876 | 4,966,134 |
| Accrued Interest and Income | 3,374,809 | 3,264,452 |
| Investment Sales | 28,250,357 | 82,216,889 |
| Other | 17,569 | 17,680 |
| Total Receivables | 37,700,611 | 90,465,155 |
| Investments, at Fair Value | | |
| Stocks and Rights/Warrants | $ 503,897,859 | $ 418,603,323 |
| Government Obligations | 94,892,144 | 40,164,929 |
| Corporate Bonds | 28,671,607 | 28,512,411 |
| Real Estate | 143,696,195 | 106,116,740 |
| Mortgages and Asset-Backed Securities | 146,951,071 | 103,112,077 |
| Absolute Return | 153,035,433 | 162,936,098 |
| Tactical Fixed Income | 81,495,581 | 75,793,208 |
| Short-Term Investments | 33,267,053 | 119,818,077 |
| Venture Capital & Partnerships | 362,322,778 | 244,309,475 |
| Total Investments | 1,548,229,721 | 1,299,366,338 |
| Invested Securities Lending Collateral | $ 60,133,588 | $ 44,655,544 |
| Prepaid Expenses | 6,794 | 5,155 |
| Capital Assets | | |
| Land | 84,000 | 84,000 |
| Building | 581,619 | 581,619 |
| Furniture, Equipment and Software | 3,414,235 | 3,053,494 |
| Accumulated Depreciation | (792,565) | (442,587) |
| Net Capital Assets | 3,287,289 | 3,276,526 |
| **TOTAL ASSETS** | **$ 1,649,392,437** | **$ 1,437,978,725** |
| **LIABILITIES:** | | |
| Long-Term Payable | $ 108,900 | $ 506,400 |
| Short-Term Payable | 397,500 | 393,300 |
| Accounts Payable | 1,559,815 | 2,061,181 |
| OPEB Obligation | 364,124 | 276,548 |
| Security Lending Collateral | 60,339,959 | 45,986,723 |
| Investment Purchases | 30,941,463 | 76,037,263 |
| **TOTAL LIABILITIES** | **$ 93,711,761** | **$ 125,261,415** |
| **NET ASSETS HELD IN TRUST FOR PENSION BENEFITS** | **$ 1,555,680,676** | **$ 1,312,717,310** |

*See accompanying Notes to the Financial Statements.*

# MoDOT AND PATROL EMPLOYEES' RETIREMENT SYSTEM

Jefferson City, Missouri

## STATEMENTS OF CHANGES IN PLAN NET ASSETS

For the Years Ended June 30, 2011 and 2010

| | 2011 | 2010 |
|---|---|---|
| **ADDITIONS:** | | |
| Contributions-Employer | $ 150,022,169 | $ 124,052,534 |
| Contributions-Employee | 45,361 | 0 |
| Contributions-Service Transfers from Other System | 17,609,276 | 0 |
| Contributions-Other | 453,984 | 424,172 |
| Total Contributions | 168,130,790 | 124,476,706 |
| Investment Income from Investing Activities | | |
| Net Appreciation in Fair Value of Investments | $ 271,818,669 | $ 163,585,646 |
| Interest and Dividends | 26,222,245 | 20,810,730 |
| Less: Investment Expenses | (18,538,828) | (18,067,443) |
| Net Investment Income | 279,502,086 | 166,328,933 |
| Income from Securities Lending Activities | | |
| Security Lending Gross Income | $ 191,719 | $ 169,460 |
| Less: Securities Lending Expenses | (81,753) | (191,339) |
| Net Income (Loss) from Securities Lending Activities | 109,966 | (21,879) |
| Other Income | $ 33,141 | $ 33,145 |
| **NET ADDITIONS** | **$ 447,775,983** | **$ 290,816,905** |
| **DEDUCTIONS:** | | |
| Monthly Benefits | $ 202,153,768 | $ 196,721,274 |
| Administrative Expenses | 2,658,849 | 2,512,181 |
| **TOTAL DEDUCTIONS** | **$ 204,812,617** | **$ 199,233,455** |
| NET INCREASE | $ 242,963,366 | $ 91,583,450 |
| **NET ASSETS HELD IN TRUST FOR PENSION BENEFITS** | | |
| **Beginning of Year** | **1,312,717,310** | **1,221,133,860** |
| **End of Year** | **$ 1,555,680,676** | **$ 1,312,717,310** |

*See accompanying Notes to the Financial Statements.*

# MISSOURI DEPARTMENT OF TRANSPORTATION AND HIGHWAY PATROL EMPLOYEES' RETIREMENT SYSTEM

# NOTES TO THE FINANCIAL STATEMENTS

For the Years Ended June 30, 2011 and 2010

## NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

As established under Section 104.020 of the Revised Statutes of Missouri (RSMo), the Missouri Department of Transportation and Highway Patrol Employees' Retirement System (MPERS) is a body corporate and an instrumentality of the State of Missouri (State). Due to the nature of MPERS' reliance on funding from the Missouri Department of Transportation (MoDOT) and the Missouri State Highway Patrol (MSHP) and control of the overall plan document by the legislative and executive branches of state government, MPERS is considered a part of the State of Missouri financial reporting entity and is included in the State's financial reports as a component unit shown as a pension trust fund.

### Note 1 (a) - Basis of Accounting

The financial statements were prepared using the accrual basis of accounting. Contributions are due to MPERS when employee services have been performed and paid. Contributions are recognized as revenues when due, pursuant to statutory requirements. Benefits are recognized when due and payable and expenses are recorded when the corresponding obligations are incurred. Dividend income is recognized when dividends are declared. Interest income is recognized when earned.

### Note 1 (b) - Method Used to Value Investments

Investments are reported at fair value on a trade date basis. Bonds and stocks traded on a national or international exchange are valued at the reported sales price at current exchange rates. Mortgages are valued on the basis of future principal and interest payments, and are discounted at prevailing interest rates for similar instruments. The fair value of real estate and timber investments are based on net asset value estimates provided by the general partners' administrators or portfolio managers, which are compared to independent appraisals. Investments that do not have an established market are reported at estimated fair value. The fair value of the absolute return, venture capital and partnership portfolios are based on valuations of the underlying companies as reported by the general partner or portfolio manager.

### Note 1 (c) - Capital Assets

MPERS capitalizes assets with an expected useful life greater than one year and a cost greater than $1,000. Capital assets are depreciated on the straight-line method over the estimated useful lives of the related assets. The estimated useful lives are as follows:

| | |
|---|---|
| Furniture, Equipment and Software | 3 – 10 years |
| Building and Improvements | 30 years |

### Note 1 (d) - Use of Estimates

The preparation of financial statements in conformity with U.S. generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements, and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

## NOTE 2 – PLAN DESCRIPTIONS AND CONTRIBUTION INFORMATION

MPERS is a body corporate and an instrumentality of the state as a multiple-employer, public employee retirement system with one plan that has three benefit structures known as the Closed Plan, the Year 2000 Plan, and the Year 2000 Plan-2011 Tier. The plan provides retirement, survivor, and disability benefits for employees of MoDOT, MSHP, and MPERS' staff. The plan is administered in accordance with the requirements of a cost sharing, multiple-employer, public employee retirement plan under the Revised Statutes of Missouri. In MPERS are vested the powers and duties specified in sections

104.010 to 104.312, 104.601 to 104.805, and 104.1003 to 104.1093, RSMo., and such other powers as may be necessary or proper to enable it, its officers, employees, and agents to carry out fully and effectively all the purposes outlined pursuant to these sections. Responsibility for the operation and administration of the System is vested in the Board of Trustees. Detailed information regarding contributions can be found in Note 5.

As of July 1, 2011, Water Patrol employees are now members of MPERS. Service credit for these employees was transferred on June 30 along with $17,609,276 for the corresponding liability.

Generally, all covered employees hired before July 1, 2000 are eligible for membership in the Closed Plan. All covered employees hired on or after July 1, 2000 and before January 1, 2011 are eligible for membership in the Year 2000 Plan. All covered employees hired on or after January 1, 2011 are eligible for membership in the Year 2000 Plan's 2011 Tier.

***Membership in the Closed Plan, Year 2000 Plan, and 2011 Tier as of June 30***

| | 2011 | | | 2011 | 2010 |
|---|---|---|---|---|---|
| | Closed | Year 2000 | 2011 Tier | Total | Total |
| Retirees, Beneficiaries, and Disabilities Currently Receiving Benefits | 5,076 | 2,716 | 0 | 7,792 | 7,610 |
| Terminated Employees Entitled to But Not Yet Receiving Benefits | 1,578 | 286 | 0 | 1,864 | 1,799 |
| Active Employees | | | | | |
| Vested | 4,398 | 2,170 | 0 | 6,568 | 6,535 |
| Non-Vested | 0 | 1,505 | 87 | 1,592 | 1,885 |
| **Total Membership** | 11,052 | 6,677 | 87 | 17,816 | 17,829 |

**Closed Plan Description**

Employees covered by the Closed Plan are fully vested for benefits upon receiving five years of creditable service. Under the Closed Plan, MoDOT and civilian employees may retire with full benefits upon the earliest of attaining:

- Age 65 with 4 or more years of creditable service (active);
- Age 65 with 5 or more years of creditable service (terminated & vested);
- Age 60 with 15 or more years of creditable service (active or terminated & vested); or
- "Rule of 80" – at least age 48 with sum of member's age and service equaling 80 or more (active or terminated & vested).

The following provisions apply for uniformed patrol members of the Closed Plan:

- Age 55 with 4 or more years of creditable service (active);
- Age 55 with 5 or more years of creditable service (terminated & vested);
- "Rule of 80" – at least age 48 with sum of member's age and service equaling 80 or more (active or terminated & vested); or
- Mandatory retirement at age 60 (active).

All non-uniformed members may retire early, with reduced benefits, at age 55 with at least 10 years of creditable service.

The base benefit in the Closed Plan is equal to 1.6% multiplied by the final average pay multiplied by years of creditable service. For members of the uniformed patrol, the base benefit is calculated by applying the same formula, then multiplying the product by 1.333333.

Retired uniformed members will receive an additional benefit of $90 per month, plus cost-of-living adjustments (COLAs), until attainment of age 65. This payment, however, is reduced by any amount earned during gainful employment. This benefit is not available to uniformed members hired after January 1, 1995.

For members employed prior to August 28, 1997, COLAs are provided annually based on 80% of the change in the consumer price index for all urban consumers for the United States (CPI-U). The minimum rate is 4% and the maximum rate is 5%, until the cumulative amount of COLAs equals 65% of the original benefit. Thereafter, the 4% minimum rate is eliminated and the annual COLA rate will be equal to 80% of the increase in the CPI-U (annual

maximum of 5%). For members employed on or after August 28, 1997, COLAs are provided annually based on 80% of the increase in the CPI-U, up to a maximum rate of 5%.

The BackDROP is a payment option that is available to eligible members upon retirement. This option provides for a benefit to be calculated as if the member elected to retire at a previous date. If the BackDROP is elected, the monthly benefit payable on the actual retirement date is based on the benefit that would have been received by the member had he/she left employment and retired on the BackDROP date. In addition, the member will receive a lump sum payment equal to 90% of the life income annuity amount the member would have received during the BackDROP period. This lump sum amount includes any COLAs and other benefit increases; also, credit will be received for the unused sick leave balance as of the date of retirement.

The life income annuity payment option (which contains no provision for survivorship) and the life income with 60 or 120 month guaranteed payment options are available to all members. Joint and 50% or 100% survivor options are available if married at the time of retirement. In the Closed Plan, the reduction for the joint & 100% survivor option is based on the difference between the age of the member and the survivor. There is no reduction for the joint and 50% survivor option.

If a reduced joint and survivor option is chosen at the time of retirement and the spouse precedes the member in death, the benefit will revert back (pop-up) to a normal annuity.

Members may name a new spouse as beneficiary if:

- They were single at retirement and since married;
- They elected a spouse option at the time of retirement, the spouse preceded the member in death, and then a remarriage occurred.

The member has one year from the date of marriage to re-elect and name a new spouse.

All members who retire from active employment or long-term disability, or begin receiving normal or work-related disability benefits, on or after September 28, 1985, are provided a $5,000 death benefit payable to designated beneficiaries.

**Year 2000 Plan Description**

Employees covered by the Year 2000 Plan are fully vested for benefits upon earning five years of creditable service. Under the Year 2000 Plan, MoDOT and civilian employees may retire with full benefits upon the earliest of attaining:

- Age 62 and with 5 or more years of creditable service (active or terminated & vested);
- "Rule of 80" – at least age 48 with sum of member's age and service equaling 80 or more (active or terminated & vested).

The following provisions apply for uniformed patrol members of the Year 2000 Plan:

- "Rule of 80" – at least age 48 with sum of member's age and service equaling 80 or more (active or terminated & vested);
- Mandatory retirement at age 60 with 5 or more years of creditable service (active only).

All members may retire early with reduced benefits at age 57 with at least 5 years of creditable service.

The base benefit in the Year 2000 Plan is equal to 1.7% multiplied by the final average pay multiplied by years of creditable service. Members retiring under the Rule of 80, and uniform patrol members retiring at the mandatory retirement age (currently 60) with five years of creditable service, receive an additional temporary benefit until age 62. The temporary benefit is equivalent to 0.8% multiplied by final average pay multiplied by years of creditable service.

COLAs are provided annually based on 80% of the change in the CPI-U, up to a maximum rate of 5%.

The BackDROP is a payment option that may be available to members upon retirement. This option provides for a monthly benefit to be calculated as if the member elected to retire at a previous date. If the BackDROP is elected, the monthly benefit payable on the actual retirement date is based on the benefit that would have been received by the member had he/she left employment and retired on the BackDROP date. In addition, the member will receive a lump sum payment equal to 90% of the life income annuity amount the member would have received during the BackDROP period. This lump sum amount includes any temporary benefits, COLAs and other benefit increases; also, credit will be received for the unused sick leave balance as of the date of retirement.

The life income annuity payment option (with no provision for survivorship) and the life income with 120 or 180 months guaranteed payment options are available to all members. Joint and 50% or 100% survivorship options are available if married at the time of retirement. The reduction for the joint and 50% or 100% survivor options is based on the member's age at retirement, as well as the age difference between the member and the survivor.

If a reduced joint and survivor option is chosen at the time of retirement and the spouse precedes the member in death, the benefit will revert back (pop-up) to a normal annuity.

Members may name a new spouse for survivor benefits if:

- They were single at retirement and since married;
- They elected a spouse option at the time of retirement, the spouse preceded the member in death, and then a remarriage occurred.

The member has one year from the date of marriage to re-elect the payment option and name a new spouse.

All members who retire from active employment or long-term disability, or begin receiving work-related disability benefits, on or after July 1, 2000, are provided a $5,000 death benefit payable to designated beneficiaries.

**Year 2000 Plan-2011 Tier Description**

Employees covered by the 2011 Tier are fully vested for benefits upon earning ten years of creditable service. Under the 2011 Tier, MoDOT and civilian employees may retire with full benefits upon the earliest of attaining:

- Age 67 and with 10 or more years of creditable service (active or terminated & vested);
- "Rule of 90" – at least age 55 with sum of member's age and service equaling 90 or more (active only).

Active MoDOT and civilian employees may retire early with reduced benefits at age 62 with at least 10 years of creditable service.

The following provisions apply for uniformed patrol members of the 2011 Tier:

- Age 55 and with 10 or more years of creditable service (active only);
- Mandatory retirement at age 60 with no minimum service amount (active only).

Terminated and vested uniformed patrol employees may retire at age 67 with 10 or more years of creditable service.

The base benefit in the 2011 Tier is equal to 1.7% multiplied by the final average pay multiplied by years of creditable service. Members retiring under the Rule of 90, and uniform patrol members retiring at the mandatory retirement age (currently 60) or at age 55 with ten years of creditable service, receive an additional temporary benefit until age 62. The temporary benefit is equivalent to 0.8% multiplied by final average pay multiplied by years of creditable service.

COLAs are provided annually based on 80% of the change in the CPI-U, up to a maximum rate of 5%.

The life income annuity payment option (with no provision for survivorship) and the life income with 120 or 180 months guaranteed payment options are available to all members. Joint and 50% or 100% survivorship options are available if married at the time of retirement. The reduction for the joint and 50% or 100% survivor options is based on the member's age at retirement, as well as the age difference between the member and the survivor.

If a reduced joint and survivor option is chosen at the time of retirement and the spouse precedes the member in death, the benefit will revert back (pop-up) to a normal annuity.

Members may name a new spouse for survivor benefits if:

- They were single at retirement and since married;
- They elected a spouse option at the time of retirement, the spouse preceded the member in death, and then a remarriage occurred.

The member has one year from the date of marriage to re-elect the payment option and name a new spouse.

All members who retire from active employment or long-term disability, or begin receiving work-related disability benefits, on or after January 1, 2011, are provided a $5,000 death benefit payable to designated beneficiaries.

**Contributions**

Beginning January 1, 2011, employee contributions of four percent of gross pay are required for those covered by the Year 2000 Plan-2011 Tier.

Employer contributions are determined through annual actuarial valuations. Administrative expenses are financed through contributions from MoDOT, MSHP and MPERS, and investment earnings.

MoDOT, MSHP and MPERS are required to make contributions to the plan based on the actuarially determined rate. Prior to August 13, 1976, contributions by all plan members were required. Accumulated employee contributions made prior to that time, plus interest, were refunded to applicable members. Maximum contribution rates were eliminated August 13, 1976.

*Schedule of Funded Status and Funding Progress*

| Actuarial Valuation Date | Actuarial Value of Assets (a) | Actuarial Accrued Liability (AAL) Entry Age (b) | Unfunded AAL (UAAL) (b-a) | Percent Funded (a/b) | Annual Covered Payroll (c) | UAAL Percentage of Covered Payroll ((b-a)/c) |
|---|---|---|---|---|---|---|
| 6/30/2011 | $1,427,290,718 | $3,297,589,869 | $1,870,299,151 | 43.28% | $362,654,376 | 515.72% |

The schedules of funding progress, presented as required supplementary information (RSI) following the Notes to the Financial Statements, present multiyear trend information about whether the actuarial values of plan assets are increasing or decreasing over time relative to the actuarial accrued liabilities for benefits.

***Additional Information as of the June 30, 2011 Actuarial Valuation follows:***

| | |
|---|---|
| Valuation Date | 6/30/2011 |
| Actuarial Cost Method | Entry Age Normal |
| Amortization Method | Closed, Level Percent Closed |
| Remaining Amortization Period | 21 years* |
| Asset Valuation Method | 3-year Smoothed Market |
| Actuarial Assumptions: | |
| Investment Rate of Return | 8.25% |
| Projected Salary Increases | 3.75% to 12.25% |
| COLAs | 2.6% Compound |
| Price Inflation | 3.75% |

*single equivalent period

## NOTE 3 – DEPOSITS AND INVESTMENTS

The Board of Trustees has established policies and procedures by which funds are invested by bank custodians and investment managers. Section 104.150, RSMo, provides the authority for the board to invest MPERS funds.

**Note 3 (a) - Deposit and Investment Risk Policies**

**Concentration of Credit Risk**

Concentration of credit risk is the risk of loss attributed to the magnitude of the System's investment in a single issuer. Unless authorized under a separate Investment Management Agreement, it is the policy of the System to limit each equity manager to investing a maximum of 5% of the market value of their portfolio in any single company and to limit fixed income managers to investing 3% of their portfolio into obligations of a single corporation. Fixed income obligations of the U.S. Government or U.S. Government agencies may be held in any amounts.

**Investment Custodial Credit Risk**

Custodial credit risk is an investment risk in that, in the event of the failure of the counterparty to a transaction, the System will not be able to recover the value of its investment or the collateral securities that are in the possession of an outside party. Investment securities are exposed to custodial credit risk if the securities are uninsured, are not registered in the name of the System, and are held by either: a) the counterparty or b) the counterparty's trust department or agent but not in the System's name. It is the policy of the System to require that all investments be clearly marked as to ownership and, to the extent possible, shall be registered in the name of the System.

**Cash Deposit Custodial Credit Risk**

Cash deposit custodial credit risk is the risk that, in the event of the failure of depository financial institution, the System will not be able to recover deposits or will not be able to recover collateral securities that are in the possession of an outside party. Missouri state law requires that all public funds must be collateralized with acceptable securities having market values of at least 100% of the amount of funds on deposit (less any amount covered by FDIC insurance).

**Market Risk**

Market risk is the risk that the fair value of an investment will be adversely impacted due to a change in value of the underlying market. The three primary market risks prevalent in the System's investment portfolio are equity prices, interest rates, and foreign currencies. Equity risk is the risk that stock prices fall and/or the volatility in the equity market increases. Interest rate risk is the risk that fixed income securities (or any investment primarily valued on a yield basis) will drop in value due to an increase in interest rates. Currency risk is the risk that changes to foreign exchange rates will adversely impact the fair value of non-U.S. Dollar denominated assets. The System protects the portfolio against market risks by adopting a diversified asset allocation that limits the amount of exposure to each underlying market risk. Market risks are also controlled by monitoring the types, amounts, and degree of risk that each investment manager takes for their specific mandate.

**Investment Credit Risk**

Investment credit risk is the risk that an issuer or other counterparty to an investment will not fulfill its obligations. Unless authorized under a separate Investment Management Agreement, it is the policy of the System to limit fixed income managers to purchasing securities that possess a minimum credit rating of "Baa" by Moody's and "BBB" by Standard & Poor's. Issues subsequently downgraded below these ratings must be brought to the attention of the Chief Investment Officer. Where counterparty risk is present, the System's investment managers seek to control credit risk through counterparty credit evaluations and approvals, counterparty credit limits and exposure monitoring procedures.

**Note 3 (b) - Cash Deposits**

Cash balances include short-term securities held by the custodial bank to meet future obligations and operating balances held by the depository bank. As of June 30, 2011 and 2010, MPERS had carrying amount of deposits of ($1,246,566) and ($1,914,861), respectively, and a bank balance of $4 and $16, respectively. The FDIC covered the bank balances. To maximize investment income, cash is invested in overnight repurchase agreements, thus causing the negative cash amounts disclosed above. The balances in these repurchase agreements at June 30, 2011 and 2010 were $1,281,000 and $2,124,868, respectively. As of June 30, 2011 and 2010, no investments were held as repurchase agreements that were uninsured or unregistered, with securities held by the counterparty or by its trust department or agent but not in MPERS' name.

**Note 3 (c) – Concentrations**

No investments in any one organization (other than those issued or sponsored by the U.S. government and those in pooled investments) represent 5% of plan net assets.

## Note 3 (d) – Investments

***Summary of Investments by Type at June 30***

| | 2011 | | 2010 | |
|---|---|---|---|---|
| | Carrying Amount | Fair Value | Carrying Amount | Fair Value |
| Government Obligations | $92,968,786 | $94,892,144 | $36,620,086 | $40,164,929 |
| Corporate Bonds | 27,995,407 | 28,671,607 | 27,265,315 | 28,512,411 |
| Stock and Rights/Warrants | 425,484,627 | 503,897,859 | 453,260,769 | 418,603,323 |
| Real Estate | 149,702,446 | 143,696,195 | 127,889,920 | 106,116,740 |
| Mortgages & Asset-Backed Securities | 152,578,823 | 146,951,071 | 124,655,750 | 103,112,077 |
| Absolute Return | 117,107,298 | 153,035,433 | 142,890,806 | 162,936,098 |
| Tactical Fixed Income | 55,537,756 | 81,495,581 | 55,548,331 | 75,793,208 |
| Venture Capital & Partnerships | 367,240,639 | 362,322,778 | 287,232,156 | 244,309,475 |
| Short-Term Investments | 34,552,499 | 34,548,053 | 122,117,934 | 121,942,945 |
| Securities Lending Collateral | 60,133,588 | 60,133,588 | 44,655,544 | 44,655,544 |
| **Total Investments** | $1,483,301,869 | $1,609,644,309 | $1,422,136,611 | $1,346,146,750 |

| | | |
|---|---|---|
| Reconciliation to Statement of Plan Net Assets: | | |
| Less: Repurchase Agreements | ($1,281,000) | ($2,124,868) |
| Less: Securities Lending Collateral | (60,133,588) | (44,655,544) |
| **Investments per Statement of Plan Net Assets** | $1,548,229,721 | $1,299,366,338 |

## Note 3 (e) – Investment Interest Rate Risk

The following table summarizes the maturities of government obligations, corporate bonds, convertible corporate bonds, mortgages, asset-backed securities, and tactical fixed income which are exposed to interest rate risk.

***Summary of Weighted Average Maturities***

| Investment Type | Fair Value | Investment Maturities (in years) as of 6/30/11 Less than 1 | 1 - 5 | 6 - 10 | More than 10 |
|---|---|---|---|---|---|
| Asset-Backed Securities | $3,579,897 | $0 | $989,182 | $1,962,896 | $627,819 |
| Commercial Mortgage-Backed Securities | 83,571,524 | 0 | 0 | 0 | 83,571,524 |
| Corporate Bonds | 28,671,607 | 0 | 12,119,722 | 11,897,656 | 4,654,229 |
| Government Agencies | 11,903,475 | 0 | 11,903,475 | 0 | 0 |
| Government Bonds | 35,306,046 | 0 | 26,108,453 | 4,706,549 | 4,491,044 |
| Government Mortgage-Backed Securities | 59,799,649 | 0 | 0 | 16,785,874 | 43,013,775 |
| Index Linked Govt Bonds | 32,099,727 | 0 | 10,417,002 | 14,943,891 | 6,738,834 |
| Municipal/Provincial Bonds | 15,582,897 | 0 | 2,661,949 | 350,217 | 12,570,731 |
| Total | $270,514,822 | $0 | $64,199,783 | $50,647,083 | $155,667,956 |
| Pooled Investments | 81,495,581 | | | | |
| **Grand Total** | $352,010,403 | | | | |

## Note 3 (f) – Investment Credit Ratings

The following table summarizes the credit ratings of the government obligations, corporate bonds, mortgages and asset-backed securities, and tactical fixed income on the Statement of Plan Net Assets.

***Summary of Credit Ratings***

| Investment Type | Quality Rating | 6/30/2011 Fair Value | 6/30/2010 Fair Value |
|---|---|---|---|
| Asset-Backed Securities | A | $1,544,685 | $734,935 |
| Asset-Backed Securities | AA | 309,964 | 95,090 |
| Asset-Backed Securities | AAA | 538,073 | 555,706 |
| Asset-Backed Securities | BB- | 182,215 | 232,310 |
| Asset-Backed Securities | BBB+ | 0 | 313,625 |
| Asset-Backed Securities | CC | 293,800 | 341,600 |
| Asset-Backed Securities | CCC | 0 | 213,603 |
| Asset-Backed Securities | not rated | 711,160 | 786,909 |
| Commercial Mortgage-Backed Securities | A- | 2,459,389 | 4,380,711 |
| Commercial Mortgage-Backed Securities | A | 1,061,281 | 2,528,597 |
| Commercial Mortgage-Backed Securities | A+ | 4,381,397 | 1,042,386 |
| Commercial Mortgage-Backed Securities | AA- | 0 | 1,610,822 |
| Commercial Mortgage-Backed Securities | AA | 505,434 | 641,893 |
| Commercial Mortgage-Backed Securities | AAA | 8,910,498 | 9,525,406 |
| Commercial Mortgage-Backed Securities | B- | 2,216,129 | 0 |
| Commercial Mortgage-Backed Securities | B | 0 | 689,388 |
| Commercial Mortgage-Backed Securities | B+ | 15,202,813 | 9,751,595 |
| Commercial Mortgage-Backed Securities | BB- | 5,452,452 | 2,509,580 |
| Commercial Mortgage-Backed Securities | BB | 9,338,381 | 7,005,644 |
| Commercial Mortgage-Backed Securities | BB+ | 1,859,199 | 2,271,878 |
| Commercial Mortgage-Backed Securities | BBB- | 148,136 | 0 |
| Commercial Mortgage-Backed Securities | BBB | 324,253 | 6,459,626 |
| Commercial Mortgage-Backed Securities | BBB+ | 6,655,862 | 0 |
| Commercial Mortgage-Backed Securities | CC | 523,894 | 0 |
| Commercial Mortgage-Backed Securities | CCC- | 769,950 | 0 |
| Commercial Mortgage-Backed Securities | CCC | 4,474,297 | 3,593,610 |
| Commercial Mortgage-Backed Securities | CCC+ | 0 | 131,793 |
| Commercial Mortgage-Backed Securities | D | 1,973,888 | 0 |
| Commercial Mortgage-Backed Securities | not rated | 17,314,271 | 14,781,893 |
| Corporate Bonds | A- | 1,484,070 | 2,558,956 |
| Corporate Bonds | A | 5,026,496 | 2,891,173 |
| Corporate Bonds | A+ | 2,389,175 | 1,240,072 |
| Corporate Bonds | AA- | 1,262,698 | 1,697,758 |
| Corporate Bonds | AA | 1,290,076 | 797,178 |
| Corporate Bonds | AA+ | 499,212 | 308,187 |
| Corporate Bonds | AAA | 0 | 956,040 |
| Corporate Bonds | BB+ | 1,154,266 | 903,607 |
| Corporate Bonds | BBB- | 7,760,553 | 7,496,944 |
| Corporate Bonds | BBB | 4,618,951 | 3,975,938 |
| Corporate Bonds | BBB+ | 2,375,070 | 3,508,299 |
| Corporate Bonds | not rated | 811,040 | 2,178,259 |
| Corporate Convertible Bonds | A+ | 0 | 319,837 |
| Government Agencies | AA | 0 | 297,231 |
| Government Agencies | AAA | 11,903,475 | 465,736 |
| Government Bonds | AAA | 0 | 26,278,817 |
| Government Bonds | Treasury | 35,306,046 | 6,652,673 |
| Government Mortgage-Backed Securities | Agency | 59,526,955 | 32,913,477 |
| Government Mortgage-Backed Securities | not rated | 272,694 | 0 |
| Index Linked Government Bonds | Treasury | 32,099,727 | 0 |
| Municipal/Provincial Bonds | A | 736,686 | 1,048,040 |
| Municipal/Provincial Bonds | A+ | 1,382,985 | 514,687 |
| Municipal/Provincial Bonds | AA- | 1,025,799 | 857,080 |
| Municipal/Provincial Bonds | AA | 157,598 | 159,387 |
| Municipal/Provincial Bonds | AA+ | 864,379 | 0 |
| Municipal/Provincial Bonds | AAA | 10,000,669 | 3,891,278 |
| Municipal/Provincial Bonds | not rated | 1,414,781 | 0 |
| Pooled Investments | not rated | 81,495,581 | 75,793,208 |
| Total | | $352,010,403 | $247,902,462 |

### Note 3 (g) – Investment Foreign Currency Risk

*Exposure to Foreign Currency Risk as of June 30*

| Foreign Currency | Cash and Equivalents | Equities | Fixed Income | Real Estate/ Partnerships | 6/30/11 Total | 6/30/10 Total |
|---|---|---|---|---|---|---|
| Australian Dollar | $176,369 | $1,157,137 | $0 | $0 | $1,333,506 | $2,703,166 |
| British Pound Sterling | 91,529 | 925,988 | 0 | 0 | 1,017,517 | 2,761,014 |
| Canadian Dollar | 59,569 | 50,277 | 0 | 0 | 109,846 | 1,660,195 |
| Euro | 315,439 | 764,023 | 0 | 13,533,649 | 14,613,111 | 9,742,550 |
| Hong Kong Dollar | 3,295 | 498,917 | 0 | 0 | 502,212 | 1,592,765 |
| Japanese Yen | 22,978 | 632,922 | 0 | 0 | 655,900 | 932,889 |
| Philippine Peso | 2,328 | 438,930 | 0 | 0 | 441,258 | 0 |
| Singapore Dollar | 186,261 | 2,427,787 | 0 | 0 | 2,614,048 | 2,435,350 |
| Swedish Krona | 3,754 | 368,773 | 0 | 0 | 372,527 | 194,742 |
| **Total Exposure Risk** | $861,522 | $7,264,754 | $0 | $13,533,649 | $21,659,925 | $22,022,671 |

### Note 3 (h) – Securities Lending

In accordance with the Board of Trustees' investment policy, MPERS participates in a securities lending program. The Northern Trust Company administers the program. There are no restrictions on the amount of securities that may be lent.

Securities that may be loaned include U.S. government and agency securities, corporate equity, and fixed income securities. Collateral may include cash, U.S. government securities and irrevocable letters of credit. U.S. securities are loaned in exchange for collateral valued at 102% of the market value of the securities, plus any accrued interest. Non-U.S. securities are loaned in exchange for collateral valued at 105% of the market value of the securities, plus any accrued interest. On June 30, 2011 and 2010, MPERS had no credit risk exposure to borrowers, since the amount of collateral exceeded the amount of the loans.

Non-cash collateral cannot be pledged or sold unless the borrower defaults. The average term of the System's loans was approximately 85 days and 88 days, as of June 30, 2011 and June 30, 2010, respectively. Cash open collateral is invested in a short-term investment pool, which had an interest sensitivity of 21 days and 25 days, as of June 30, 2011 and June 30, 2010, respectively. Cash collateral may also be invested separately in "term loans", in which case the investments match the loan term. These loans can be terminated on demand by either lender or borrower. There were no known violations of legal or contractual provisions, or borrower or lending agent default losses. There were no dividends or coupon payments owing on the securities lent. Securities lending earnings are credited on approximately the fifteenth day of the following month.

Indemnification deals with a situation in which a client's securities would not be returned due to the insolvency of a borrower and Northern Trust would fail to live up to its contractual responsibilities relating to the lending of those securities. Northern Trust's responsibilities include performing appropriate borrower and collateral investment credit analyses and demanding adequate types and levels of collateral.

The collateral held (including both cash collateral recognized in the Statement of Plan Net Assets and non-cash collateral) was as follows at June 30:

*Collateral Held*

| Investment Type | 2011 | 2010 |
|---|---|---|
| Equities | $41,536,004 | $34,062,205 |
| Government & government sponsored securities | 11,786,835 | 7,657,793 |
| Corporate bonds | 7,017,120 | 4,266,725 |
| | $60,339,959 | $45,986,723 |

**Note 3 (i) – Derivatives**

A derivative financial instrument is an investment whose value depends on the values of one or more underlying assets, financial indexes, or commodity prices. These investments include futures contracts, options contracts, and forward foreign currency exchange. Derivative financial instruments involve credit risk and market risk, as described in Note 3 (a), in varying levels. The notional value related to these derivative instruments are generally not recorded on the financial statements; however, the change in market value of these instruments is incorporated in performance. MPERS had no derivatives contracts in their portfolio as of June 30, 2011. The notional/market value of $131,922,512 for the various contracts in MPERS' portfolio as of June 30, 2010 is recorded in investments on the Statement of Plan Net Assets. The change in fair value of $22,369,693 for the year ended June 30, 2010 is recorded in investment income on the Statement of Changes in Plan Net Assets.

## NOTE 4 – RECEIVABLES

Receivables at June 30 consisted of the following:

*Receivables*

| Type | 2011 | 2010 |
|---|---|---|
| Contributions-MoDOT | $3,972,515 | $3,308,463 |
| Contributions-MSHP Non-Uniformed | 697,114 | 559,379 |
| Contributions-MSHP Uniformed | 1,370,534 | 1,086,610 |
| Contributions-Retirement System | 17,713 | 11,682 |
| Commission Recapture | 3,008 | 1,293 |
| Securities Lending | 14,477 | 16,202 |
| Amounts Due From Members | 84 | 185 |
| Investment Interest & Income | 3,374,809 | 3,264,452 |
| Investment Sales | 28,250,357 | 82,216,889 |
| | $37,700,611 | $90,465,155 |

## NOTE 5 – CONTRIBUTIONS

MoDOT, the Highway Patrol, and MPERS make contributions to the System, as well as employees covered under the Year 2000 Plan-2011 Tier. MPERS permanent funding policy provides for actuarially determined employer contributions using the entry-age normal cost method on a closed group basis (consisting of normal cost and amortization of any unfunded accrued liabilities over a 30-year period, beginning July 1, 2006). (The objective is to reduce the period by one year each year.) A temporary accelerated policy has been adopted where the total contribution is based on entry-age normal cost plus a 15-year amortization period for unfunded retiree liabilities and a 30-year amortization period for other unfunded liabilities. Both amortization periods are closed periods starting July 1, 2010. This temporary accelerated policy was adopted by the MPERS' Board of Trustees on September 17, 2009 and will remain in effect until such time as the retiree liability becomes 100% funded or the permanent policy produces a higher contribution rate. Actuarially determined rates, expressed as percentages of annual covered payroll,

provide for amounts sufficient to fund those benefits designated by state statute to be funded in advance. Actuarial assumptions used to compute contribution requirements are the same as those used to compute the pension benefit obligation. The employee contribution rate for members of the Year 2000 Plan-2011 Tier is set by statute.

Required employer contributions totaling $150,022,169 and $124,052,534 for fiscal years 2011 and 2010, respectively, represent funding of normal costs and amortization of the unfunded accrued liability. Actual contributions made were 100% of required contributions. Contribution rates as determined by the System's actuary for the years ended June 30, 2011 and 2010 are shown below. The Board established actual rates to be the same as the actuarially determined rates.

*Contribution Rates*

| 2011 | | | 2010 | |
|---|---|---|---|---|
| MoDOT, MPERS & Civilian Patrol | Uniformed Patrol | 2011 Tier Employee | MoDOT, MPERS & Civilian Patrol | Uniformed Patrol |
| 39.46% | 49.53% | 4.00% | 31.40% | 39.95% |

## NOTE 6 – RELATED PARTY TRANSACTIONS

MoDOT rents office space from MPERS. The contract began in June 2008 and is effective through December 2011. This amounted to other income of $33,141 and $33,145 during FY11 and FY10, respectively.

## NOTE 7 – PERSONAL SERVICES AND RETIREMENT PLAN

MPERS employed 14 full-time employees on June 30, 2011 and 13 on June 30, 2010. Six former MPERS employees have retired. Full-time employees are also members of the System. For these employees, MPERS accrued 39.46% of payroll during FY11, amounting to $365,073, which was equal to the required contribution. The net obligations for FY11 and the two preceding years are shown below. These amounts are recorded as both a contribution and administrative expense. Information regarding the retirement plans can be found in Notes 2 and 5.

*Net Obligations*

| Year Ended June 30 | Annual Required Contribution Percent | Annual Required Contribution Dollars | Percent Contributed | Net Obligation |
|---|---|---|---|---|
| 2009 | 30.72%[1] | 255,300 | 100% | $0 |
| 2010[2] | 31.40%[1] | 282,762 | 100% | $0 |
| 2011 | 39.46%[1] | 365,073 | 100% | $0 |

[1] The Annual Required Contribution rate is equal to the Actuarially Required Contribution rate.
[2] New assumptions adopted.

## NOTE 8 – OTHER POSTEMPLOYMENT BENEFITS (OPEB)

In addition to the retirement benefits described previously, MPERS provides a portion of health care insurance through the MoDOT and MSHP Medical and Life Insurance Plan (Insurance Plan) in accordance with Missouri state statutes. For the purpose of reporting OPEB costs and obligations in accordance with Governmental Accounting Standards Board (GASB) Statement 45, the Insurance Plan is considered an agent multiple-employer defined benefit plan administered by MoDOT. Medical insurance benefits

are established by the Insurance Plan's Board of Trustees and are approved by the Missouri Highways and Transportation Commission. Benefits include general inpatient and outpatient medical services; mental, nervous and substance abuse care; and prescriptions. Eligible members are employees who retired from the System with a minimum of 5 years of service and who participate in the Insurance Plan. MoDOT issues a publicly available financial report that includes financial statements and required supplementary information for the Insurance Plan. Requests for this report should be addressed to MoDOT, Controller's Division, P.O. Box 270, Jefferson City, MO 65102.

Employer and member contributions are established by the Insurance Plan's Board of Trustees and are approved by the Missouri Highways and Transportation Commission. Premiums vary by coverage categories, which include retirees, certain disabled employees, spouses, certain dependents, and survivors of deceased employees and retirees.

Employer and member required contribution rates average approximately 51% and 49%, respectively. The Insurance Plan is financed on a pay-as-you-go basis and is an internal service fund of MoDOT.

MoDOT's actuarial valuations for the Insurance Plan are performed biennially. The July 1, 2009 actuarial valuation was used for the FY10 and FY11 financial statements. For this period, the annual required contribution (ARC) is equal to the annual OPEB cost. MPERS contributed $31,619 in both FY11 and FY10 (27% and 26% of the ARC respectively), including implicit rate subsidies. Although funding is not related to payroll amounts, an equivalent Annual Required Contribution (ARC) rate would be 12.8% and 13.1% of annual covered payroll of $930,925 and $912,611 for FY11 and FY10, respectively. MPERS' share of the net OPEB obligation was $364,124 and $276,548 at June 30, 2011 and 2010, respectively. MPERS' share of the changes in the Insurance Plan's net OPEB obligation is shown below.

***OPEB Cost and Obligation for the Year Ended June 30,***

| | 2011 | 2010 |
|---|---|---|
| Normal Cost | $56,791 | $56,791 |
| Amortization Payment | 60,910 | 60,910 |
| Interest | 17,742 | 13,746 |
| Adjustment to ARC | (16,248) | (11,031) |
| Annual OPEB cost | 119,195 | 120,416 |
| Contributions | (31,619) | (31,619) |
| Increase in net OPEB obligation | 87,576 | 88,797 |
| Adjustment for prior years' interest | 0 | 5,446 |
| Net OPEB Obligation - beginning of year | 276,548 | 182,305 |
| Net OPEB Obligation - end of year | $364,124 | $276,548 |

Because the Insurance Plan is an internal service fund of MoDOT, the Insurance Plan's assets have not been set aside. Because of this, there is no actuarial value of assets, so the entire actuarial accrued liability (AAL) is unfunded. Based on an actuarial report dated July 1, 2009, MPERS' portion of the AAL is $1,036,681, which is equal to MPERS' portion of the unfunded actuarial accrued liability (UAAL), as shown below.

***Actuarial Accrued Liability***

| | |
|---|---|
| Actuarial accrued Liability | $1,036,681 |
| Actuarial value of assets | 0 |
| Unfunded actuarial accrued liability (UAAL) | $1,036,681 |
| Funded ratio (actuarial value of plan assets/AAL) | 0% |
| Covered payroll | $930,925 |
| UAAL as a percentage of covered payroll | 111% |

Actuarial valuations of an ongoing plan reflect long-term perspective and involve estimates of the value of reported amounts and assumptions about the probability of occurrence of events far into the future. Examples include assumptions about future employment, mortality, and the healthcare cost trend. These calculations are subject to continual revision as actual results are compared to past expectations and new estimates are made about the future. A schedule of funding progress is presented as required supplementary information following the notes to the financial statements. As allowed by the GASB, this reporting requirement is being implemented prospectively. Data is not available for prior years. Over time, the schedule of funding progress will present trend information about whether the actuarial value of plan assets is increasing or decreasing relative to the AAL for benefits.

Projections of benefits for financial reporting purposes are based on the substantive plan (the plan as understood by the employers and plan members) and include the types of benefits provided at the time of each valuation and the historical pattern of sharing of benefit costs between the employers and plan members to that point. The actuarial methods and assumptions used include techniques that are designed to reduce short-term volatility in actuarial accrued liabilities and the actuarial value of assets, consistent with the long-term perspective of the calculations. The actuarial methods and assumptions utilized in the valuation are shown on the following table.

***Actuarial Methods and Assumptions***

| | |
|---|---|
| Actuarial cost method | projected unit credit |
| UAAL amortization method | level dollar amount |
| UAAL amortization period | 30 years |
| UAAL amortization approach | open |
| Investment return (discount) rate | 4.5% |
| Healthcare cost trend rate | 8%, decreasing to 5% in 2015 |

## NOTE 9 – CAPITAL ASSETS

***Summary of Changes in Capital Assets***

| | 6/30/2010 Balance | Additions | Deletions/ Retirements | 6/30/2011 Balance |
|---|---|---|---|---|
| Land | $84,000 | $0 | $0 | $84,000 |
| Buildings | 581,619 | 0 | 0 | 581,619 |
| Furniture, Equipment and Software | 3,053,494 | 383,231 | (22,490) | 3,414,235 |
| Less: Accumulated Depreciation | (442,587) | (372,468) | 22,490 | (792,565) |
| Total | $3,276,526 | $10,763 | $0 | $3,287,289 |

| | 6/30/2009 Balance | Additions | Deletions/ Retirements | 6/30/2010 Balance |
|---|---|---|---|---|
| Land | $84,000 | $0 | $0 | $84,000 |
| Buildings | 581,619 | 0 | 0 | 581,619 |
| Furniture, Equipment and Software | 1,318,357 | 1,735,137 | 0 | 3,053,494 |
| Less: Accumulated Depreciation | (324,729) | (117,858) | 0 | (442,587) |
| Total | $1,659,247 | $1,617,279 | $0 | $3,276,526 |

## NOTE 10 – OPERATING LEASES

As of June 30, 2011, MPERS is committed to two equipment and services related leases. The leases extend through May 2014. As of June 30, 2010, MPERS was committed to four leases. Expenditures for the years ended June 30, 2011 and 2010 amounted to $25,884 and $32,123, respectively.

***Future Minimum Lease Payments***

| Year Ending June 30 | |
|---|---|
| 2012 | $8,604 |
| 2013 | 8,604 |
| 2014 | 6,135 |
| **Total minimum lease payments** | **$23,343** |

## NOTE 11 – RISK MANAGEMENT

MPERS is exposed to various risks of loss related to natural disasters, asset theft or damage, errors and omissions, torts, and employee injuries.

MPERS has purchased commercial insurance related to capital asset loss and damage. Ancillary coverage provided through the property policy includes coverage for accounts receivable, loss of money and securities, employee dishonesty, and forgery and alterations. MPERS carries a $2 million umbrella liability policy. MPERS has coverage through Missouri Highway and Transportation Commission's Self-Insurance Fund related to workers' compensation.

MPERS' has also purchased an executive risk insurance package that includes directors and officers liability ($1 million aggregate coverage), employment practices liability ($1 million aggregate coverage) and fiduciary liability coverage ($5 million aggregate coverage). These coverages are inclusive of legal defense costs and each policy carries a $25,000 deductible. The State's Legal Expense Fund covers all state employees and officers, and MPERS has purchased surety bonds for the director and staff. Settlements have not exceeded coverages for each of the past three fiscal years.

## NOTE 12 – COMMITMENTS

As of June 30, 2011, MPERS has $320,950,648 unfunded commitments in alternative investments.

During fiscal year 2007, the System purchased a new pension administration software system. $3,248,161 of the total costs have been capitalized and $181,777 have been expensed. As of June 30, 2011, payments totaling $2,741,761 have been made on the capitalized portion, leaving $506,400 remaining to be paid. Of this remaining amount, $397,500 will be paid in FY2012, and $108,900 in FY2013.

# REQUIRED SUPPLEMENTARY INFORMATION

## SCHEDULE OF FUNDING PROGRESS

| Year Ended June 30 | Actuarial Asset Value | Accrued Liability – Entry Age | Unfunded Accrued Liability (UAAL) | Funded Ratio | Actuarial Covered Payroll[1] | UAAL as a Percentage of Covered Payroll |
|---|---|---|---|---|---|---|
| 2006 | $1,521,142,953 | $2,740,437,837 | $1,219,294,884 | 55.51% | $341,227,890 | 357.33 |
| 2007[2] | 1,685,807,004 | 2,897,267,409 | 1,211,460,405 | 58.19% | 365,012,472 | 331.90 |
| 2008 | 1,783,902,280 | 3,019,633,781 | 1,235,731,501 | 59.08% | 375,984,141 | 328.67 |
| 2009 | 1,471,496,660 | 3,113,393,645 | 1,641,896,985 | 47.26% | 379,542,506 | 432.60 |
| 2010[2] | 1,375,844,573 | 3,258,866,925 | 1,883,022,352 | 42.22% | 378,063,006 | 498.07 |
| 2011 | 1,427,290,718 | 3,297,589,869 | 1,870,299,151 | 43.28% | 362,654,376 | 515.72 |

[1] Values are estimated from contribution rate and amount.
[2] New assumptions adopted.

## SCHEDULE OF EMPLOYER CONTRIBUTIONS

| Year Ended June 30 | Uniformed Patrol | | | MoDOT, Civilian Patrol & MPERS | | |
|---|---|---|---|---|---|---|
| | Annual Required Contribution | | Percent Contributed | Annual Required Contribution | | Percent Contributed |
| | Percent | Dollars | | Percent | Dollars | |
| 2006 | 44.27 | 24,102,199 | 100 | 30.49 | 87,440,518 | 100 |
| 2007[2] | 44.28[1] | 27,802,932 | 100 | 31.10[1] | 93,991,526 | 100 |
| 2008 | 42.61 | 29,147,429 | 100 | 31.01 | 95,380,249 | 100 |
| 2009 | 40.22 | 27,298,132 | 100 | 30.72 | 95,745,169 | 100 |
| 2010[2] | 39.95 | 26,936,683 | 100 | 31.40 | 97,540,023 | 100 |
| 2011 | 49.53 | 33,688,925 | 100 | 39.46 | 116,263,825 | 100 |

[1] The ARC is the rate adopted by the Board of Trustees. This rate exceeded the actuarially calculated rate
[2] New assumptions adopted.

## NOTES TO THE SCHEDULES OF TREND INFORMATION

The information presented in the required supplementary schedules was determined as part of the actuarial valuation at the dates indicated. Additional information as of the latest actuarial valuation follows:

Valuation Date ........ June 30, 2011
Actuarial Cost Method ........ Entry Age Normal
Amortized Method ........ Level Percent of Payroll
Remaining Amortization Period ........ 21 Years (single equivalent period)
Amortization Approach ........ Closed
Asset Valuation Method ........ 3-Year Smoothing
Actuarial Assumptions:
- Investment Rate of Return ........ 8.25%
- Projected Salary Increase ........ 3.75% to 12.25%
- Cost-of-Living Adjustments ........ 2.6% Compound
- Includes Wage Inflation at ........ 3.75%

# REQUIRED SUPPLEMENTARY INFORMATION

## OTHER POSTEMPLOYMENT BENEFIT PLAN
## SCHEDULE OF FUNDING PROGRESS
## FOR MODOT AND MSHP MEDICAL AND LIFE INSURANCE PLAN

| Year Ended June 30 | Actuarial Value of Assets (a) | Actuarial Accrued Liability (AAL) (b) | Unfunded AAL (UAAL) (b-a) | Funded Ratio (a/b) |
|---|---|---|---|---|
| 2008 | $0 | $1,178,303 | $1,178,303 | 0% |
| 2010[1] | $0 | $1,036,681 | $1,036,681 | 0% |

[1]New assumptions adopted.

Actuarial valuations are performed biennially. The July 1, 2009 actuarial valuation was used for FY10 and FY11 financial statements and the July 1, 2007 actuarial valuation was used for FY08 and FY09 financial statements. As allowed by the GASB, this reporting requirement is being implemented prospectively, as prior years' data is not available.

Because this plan is an internal service fund of MoDOT, assets have not been set aside. Therefore, there is no actuarial value of assets. This results in a calculated funded ratio of zero percent.

## NOTES TO THE SCHEDULE OF TREND INFORMATION

The information presented in the required supplementary schedule was determined as part of the actuarial valuation at the date indicated. Additional information as of the latest actuarial valuation follows:

| | |
|---|---|
| Valuation Date | July 1, 2009 |
| Actuarial Cost Method | Projected Unit Credit |
| UAAL Amortization Method | Level Dollar Amount |
| UAAL Amortization Period | 30 Years |
| UAAL Amortization Approach | Open |
| Investment Return (discount) Rate | 4.5% |
| Healthcare Cost Trend Rate | 8% Decreasing to 5% in 2015 |

# MoDOT AND PATROL EMPLOYEES' RETIREMENT SYSTEM

## SCHEDULES OF ADMINISTRATIVE EXPENSES
FOR THE YEARS ENDED JUNE 30, 2011 AND 2010

| | 2011 | 2010 |
|---|---|---|
| **Personal Services:** | | |
| Salary Expense | $946,572 | $930,172 |
| Employee Benefit Expense | 672,455 | 587,265 |
| **Total Personal Services** | $1,619,027 | $1,517,437 |
| **Professional Services:** | | |
| Actuarial Services | $87,714 | $111,140 |
| Computer Services | 0 | 212,605 |
| Audit Expense | 29,400 | 30,815 |
| Disability Program | 15,104 | 13,687 |
| Consultant Fees | 115,022 | 122,374 |
| Fiduciary Insurance | 53,999 | 0 |
| Other | 15,403 | 9,502 |
| **Total Professional Services** | $316,642 | $500,123 |
| **Miscellaneous:** | | |
| Depreciation | $372,468 | $117,859 |
| Meetings/Travel/Education | 67,366 | 59,889 |
| Equipment/Supplies | 39,127 | 50,876 |
| Printing/Postage | 67,263 | 89,989 |
| Bank Service Charge | 8,105 | 8,021 |
| Building Expenses | 102,238 | 88,249 |
| Other | 66,613 | 79,738 |
| **Total Miscellaneous** | $723,180 | $494,621 |
| **Total Administrative Expenses** | $2,658,849 | $2,512,181 |

# MoDOT AND PATROL EMPLOYEES' RETIREMENT SYSTEM

## SCHEDULES OF INVESTMENT EXPENSES

FOR THE YEARS ENDED JUNE 30, 2011 AND 2010

| | 2011 | 2010 |
|---|---|---|
| **Investment Income Expenses:** | | |
| Management and Performance Fees | | |
| Aberdeen Asset Management | $159,623 | $145,998 |
| ABRY Partners | 270,974 | 376,041 |
| Acadian Asset Management | 870,319 | 905,766 |
| AEW | 255,266 | 187,500 |
| Albourne | 240,000 | 240,000 |
| Algert Coldiron Investments (ACI) | 14,475 | 115,418 |
| American Infrastructure MLP | 222,570 | 257,625 |
| Anchorage Capital | 140,724 | 0 |
| Apollo Real Estate | 327,364 | 283,723 |
| AQR Capital Management | 266,831 | 235,767 |
| Artio (formerly Julius Baer) | 492,819 | 607,856 |
| Audax Group | 143,185 | 132,197 |
| Barclays Global Investors | 461,695 | 349,081 |
| Black River | 222,249 | 393,085 |
| Brevan Howard | 465,074 | 715,194 |
| Bridgewater Associates | 1,922,917 | 919,795 |
| CBRE | 116,440 | 91,951 |
| Clifton | 47,079 | 68,089 |
| Colony Capital | 2,500 | 100,506 |
| Concordia | 5,777 | 21,178 |
| CQS Management | 66,447 | 260,077 |
| CarVal Investors (CVI) | 375,303 | 443,057 |
| Deephaven Capital Management | 10,155 | 49,259 |
| EIF Management | 152,625 | 174,825 |
| Enhanced Investment Technologies (INTECH) | 329,855 | 283,907 |
| GMO | 0 | 118,096 |
| Grove Street Advisors | 3,000,000 | 1,615,385 |
| GSO | 0 | 0 |
| ING Clarion | 447,573 | 432,294 |
| Luxor | 416,354 | 265,325 |
| Natural Gas Partners | 397,817 | 425,207 |
| Och-Ziff Real Estate | 145,313 | 179,339 |
| Ospraie | 262,121 | 247,990 |
| Paulson and Co. | 635,527 | 585,328 |
| Pinnacle Associates | 304,832 | 223,399 |
| Principal Global Investors | 750,355 | 648,264 |
| RMK Timberland | 153,096 | 164,137 |
| Rothschild Asset Management | 87,590 | 76,189 |
| Silchester International Investors | 597,271 | 612,932 |
| Stark Investments (Shepard) | 151,430 | 159,517 |
| Structured Portfolio Management (SPM) | 930,038 | 1,910,068 |
| Taconic | 683,004 | 547,355 |
| Tortoise | 272,788 | 0 |
| Urdang | 188,051 | 261,969 |
| Vectis | 187,500 | 187,500 |
| Vicis Capital | 19,834 | 95,991 |
| Western Asset Management Company | 479,154 | 1,442,370 |
| Total Management and Performance Fees | $17,691,914 | $17,556,550 |
| | | |
| Investment Custodial Fee | 115,915 | 97,212 |
| Performance Management | 84,837 | 87,000 |
| General Consultant (monitoring) Fee | 225,000 | 225,000 |
| Other Investment Expenses | 421,162 | 101,681 |
| Total Investment Income Expenses | $18,538,828 | $18,067,443 |
| | | |
| **Securities Lending Expenses:** | | |
| Borrower Rebates | $34,609 | $112,145 |
| Bank Fees | 47,144 | 79,194 |
| Total Securities Lending Expenses | $81,753 | $191,339 |

# MoDOT AND PATROL EMPLOYEES' RETIREMENT SYSTEM

## SCHEDULES OF CONSULTANT AND PROFESSIONAL EXPENSES
FOR THE YEARS ENDED JUNE 30, 2011 AND 2010

| | 2011 | 2010 |
|---|---|---|
| Actuarial Services | $87,714 | $111,140 |
| Computer Services | 0 | 212,605 |
| Audit Services | 29,400 | 30,815 |
| Disability Administrative Services | 15,104 | 13,687 |
| Legislative Consultant | 26,500 | 33,667 |
| Board Governance Consultant | 52,896 | 51,634 |
| Customer Service and Benefit Delivery | 29,626 | 31,073 |
| Insurance Consultant | 6,000 | 6,000 |
| Fiduciary Insurance | 53,999 | 0 |
| Other | 15,403 | 9,502 |
| **Total Consultant and Professional Expenses** | $316,642 | $500,123 |

# MISSOURI DEPARTMENT OF TRANSPORTATION AND HIGHWAY PATROL EMPLOYEES' RETIREMENT SYSTEM

## COMMUNICATION OF AUDIT RELATED MATTERS

JUNE 30, 2011

WILLIAMS
KEEPERS LLC
CERTIFIED PUBLIC ACCOUNTANTS & CONSULTANTS

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OFFICE (573) 442-6171 FAX (573) 777-7800

3220 West Edgewood, Suite E, Jefferson City, MO 65109
OFFICE (573) 635-6196 FAX (573) 644-7240

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December 16, 2011

To the Audit Committee of the Board of Trustees of the
Missouri Department of Transportation and
Highway Patrol Employees' Retirement System

We have audited the financial statements of the Missouri Department of Transportation and Highway Patrol Employees' Retirement System (the System) for the year ended June 30, 2011 and have issued our report thereon dated December 16, 2011. Professional standards require that we provide you with the following information related to our audit.

**Our Responsibility under U.S. Generally Accepted Auditing Standards**

As stated in our engagement letter dated June 30, 2011, our responsibility, as described by professional standards, is to express an opinion about whether the financial statements prepared by management, with your oversight, are fairly presented in all material respects in conformity with U.S. generally accepted accounting principles. Our audit of the financial statements does not relieve you or management of your responsibilities.

In planning and performing our audit, we considered the System's internal control over financial reporting (internal control) in order to determine our auditing procedures for the purpose of expressing our opinions on the financial statements and not to provide assurance on the internal control.

**Other Information in Documents Containing Audited Financial Statements**

We have been advised that the System's audited financial statements will be reproduced in the System's Comprehensive Annual Financial Report (CAFR). Our responsibility for the other information in the CAFR does not extend beyond the financial information identified in the audited financial statements and, as auditors, we do not have an obligation to perform any procedures to corroborate other information contained in the CAFR.

We will compare the financial statements as prepared for the CAFR for agreement with our issued audit report to determine the manner of presentation is not misleading.

**Planned Scope and Timing of the Audit**

An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements; therefore, our audit involves judgment about the number of transactions to be examined and the areas to be tested.

Our audit included obtaining an understanding of the System and its environment, including internal control, sufficient to assess the risks of material misstatement of the financial statements and to design the nature, timing, and extent of further audit procedures. Material misstatements may result from (1) errors, (2) fraudulent

financial reporting, (3) misappropriation of assets, or (4) violations of laws or governmental regulations that are attributable to the System or to acts by management or employees acting on behalf of the System.

We performed the audit according to the planned scope and timing previously communicated during our preliminary audit meetings.

## Significant Audit Findings

*Qualitative Aspects of Accounting Practices*

Management is responsible for the selection and use of appropriate accounting policies. The significant accounting policies used by the System are described in Note 1 to the financial statements. No new accounting policies were adopted and the application of existing policies was not changed during the year ended June 30, 2011. We noted no transactions entered into by the System during the year for which there is a lack of authoritative guidance or consensus. All significant transactions have been recognized in the financial statements in the proper period.

Accounting estimates are an integral part of the financial statements prepared by management and are based on management's knowledge and experience about past and current events and assumptions about future events. Certain accounting estimates are particularly sensitive because of their significance to the financial statements and because of the possibility that future events affecting them may differ significantly from those expected. The most sensitive estimate(s) affecting the financial statements were the following:

> The actuarial methods and assumptions used for funding purposes and for determining the System's accumulated plan benefits and the estimated fair values of alternative investments represent particularly sensitive accounting estimates. Other significant estimates include the fair values of the System's investments and the useful lives of capital assets. We evaluated the key factors and assumptions used to develop those estimates in determining that they are reasonable in relation to the financial statements taken as a whole.

The disclosures in the financial statements are neutral, consistent and clear. Certain financial statement disclosures are particularly sensitive because of their significance to the financial statement users. The most sensitive disclosures affecting the financial statements were investments and the funded status of the plan.

*Difficulties Encountered in Performing the Audit*

We encountered no significant difficulties in dealing with management in performing and completing our audit.

*Corrected and Uncorrected Misstatements*

Professional standards require us to accumulate all known and likely misstatements identified during the audit, other than those that are trivial, and communicate them to the appropriate level of management. For purposes of this letter, professional standards define a significant audit adjustment as a proposed correction to the financial statements that, in our judgment, may not have been detected except through our auditing procedures. These adjustments may include those proposed by us but not recorded by the System that potentially cause future financial statements to be materially misstated, even though we have concluded that such an adjustment is not material to the current financial statements. We proposed no audit adjustments that could, in our judgment, either individually, or in the aggregate, have a significant effect on the System's financial reporting process.

*Disagreements with Management*

For purposes of this letter, professional standards define a disagreement with management as a financial accounting, reporting, or auditing matter, whether or not resolved to our satisfaction, that could be significant to the financial statements or the auditor's report. We are pleased to report that no such disagreements arose during the course of our audit.

*Management Representations*

We have requested certain representations from management that are included in the management representation letter dated December 16, 2011.

*Management Consultations with Other Independent Accountants*

In some cases, management may decide to consult with other accountants about auditing and accounting matters, similar to obtaining a "second opinion" on certain situations. If a consultation involves application of an accounting principle to the System's financial statements or a determination of the type of auditor's opinion that may be expressed on those statements, our professional standards require the consulting accountant to check with us to determine that the consultant has all the relevant facts. To our knowledge, there were no such consultations with other accountants.

*Other Audit Findings or Issues*

We generally discuss a variety of matters, including the application of accounting principles and auditing standards, with management each year prior to retention as the System's auditors. However, these discussions occurred in the normal course of our professional relationship and our responses were not a condition to our retention.

We thank System officials and employees for their assistance during the course of our audit. This information is intended solely for the use of the Board of Trustees and management of the System and is not intended to be and should not be used by anyone other than these specified parties.

Sincerely,

Williams-Keepers LLC

WILLIAMS-KEEPERS LLC

# MISSOURI DEPARTMENT OF TRANSPORTATION AND HIGHWAY PATROL EMPLOYEES' RETIREMENT SYSTEM

## MANAGEMENT LETTER

## JUNE 30, 2011

WILLIAMS KEEPERS LLC
CERTIFIED PUBLIC ACCOUNTANTS & CONSULTANTS

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OFFICE (573) 442-6171 FAX (573) 777-7800

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OFFICE (573) 635-6196 FAX (573) 644-7240

www.williamskeepers.com

December 16, 2011

To the Board of Trustees of the
Missouri Department of Transportation and
Highway Patrol Employees' Retirement System

In planning and performing our audit of the financial statements of the Missouri Department of Transportation and Highway Patrol Employees' Retirement System (the System) for the year ended June 30, 2011, in accordance with U.S. generally accepted auditing standards, we considered the System's internal control over financial reporting (internal control) as a basis for designing our auditing procedures for the purpose of expressing our opinion on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the System's internal control. Our consideration of internal control included procedures to evaluate the design of controls relevant to an audit of financial statements and to determine whether they have been implemented, but it did not include procedures to test the operating effectiveness of controls and, accordingly, was not directed to discovering significant deficiencies in internal control. Accordingly, we do not express an opinion on the effectiveness of the System's internal control.

A *deficiency* in internal control exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent or detect and correct misstatements on a timely basis. A *material weakness* is a deficiency or combination of deficiencies in internal control, such that there is a reasonable possibility that a material misstatement of the System's financial statements will not be prevented or detected and corrected on a timely basis. A *significant deficiency* is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph and was not designed to identify all deficiencies in internal control that might be significant deficiencies or material weaknesses and, therefore, there can be no assurance that all such deficiencies have been identified. In addition, because of inherent limitations in internal control, including the possibility of management override of controls, misstatements due to error or fraud may occur and not be detected by such controls. We did not identify any deficiencies in internal control that we consider to be material weaknesses.

However, during our audit, we became aware of several matters that are opportunities for strengthening internal controls and operating efficiency. The items listed below summarize our comments and suggestions regarding those matters.

## PRIOR YEAR RECOMMENDATIONS CONSIDERED BY MANAGEMENT BUT NOT YET FULLY IMPLEMENTED

### Information technology - MoDOT and MSHP services

We noted the System utilizes information technology (IT) services from the Missouri Department of Transportation (MoDOT) and the Missouri State Highway Patrol (MSHP). As part of its monitoring efforts, the System should ensure that IT internal controls at MoDOT and MSHP are suitably designed and operating effectively. While the System has obtained an understanding of IT internal controls through inquiry and observation, no testing of these controls had been performed to evaluate the on-going effectiveness of the IT controls at MoDOT and MSHP.

We recommended the System consider adding and implementing a right to audit clause within the operating agreements that are currently in place with MoDOT and MSHP to allow the System to monitor (either internally or through an external vendor) the on-going effectiveness of IT controls. In lieu of this, the System could consider the cost/benefit of bringing such functions in-house to eliminate the need to rely on third parties.

*MANAGEMENT'S RESPONSE:*

*The Service Level Agreements with both MoDOT and MSHP have been updated to include language allowing MPERS to conduct testing and monitoring procedures to ensure the IT internal controls are suitably designed and operating efficiently.*

*MPERS sent out a request for information (RFI) to interested vendors for the service of performing a detailed assessment of MPERS' IT architecture. Based on the information provided in response to this RFI, approval has been granted to go forward and develop a full Request for Proposal (RFP). The RFP will request a full assessment of the adequacy and completeness of the IT architecture, staffing, project management and IT general controls for MPERS, along with information on any potential control exposures and recommendations for improvements.*

### Information technology - Security reviews

We noted the System has not had IT internal audits or information security reviews conducted on a periodic basis. During 2010, a new pension software system, Pension Gold, was implemented. Because the System is heavily reliant on this web-based application which has internet-facing functionality, there is greater importance to perform regular reviews of IT security. Without performing audits of the operational and technical functions of IT, the System could be at risk for procedures or controls being circumvented or not followed resulting in internal system or data compromise. We further noted there is no one on staff at the System that is responsible for handling the IT function.

We recommended the System consider establishing a formal program of tests to be conducted on critical hardware devices and software applications, including an external vulnerability assessment of the Pension Gold application. We further recommended the System establish internal procedures to continuously monitor IT security. The hiring of an individual to be responsible for the IT function would assist in this process.

*MANAGEMENT'S RESPONSE:*

*IBM Corporation was hired by Levi, Ray, and Shoup (LRS), our technology vendor for MPERS' Pension Administration System, to conduct Web application security testing against the PensionGold PE and Web Member Services applications. MPERS received documentation with pertinent information about the on-going testing, and LRS will continue to have these security tests done on an annual basis. MPERS requested and received information from the latest FBI IT security audit conducted at the Missouri State Highway Patrol (MSHP). Another of these audits is scheduled in August 2012. The State Auditor's Office (SAO) conducted audits on MoDOT's Information Systems Security Controls and MoDOT's Data Security. MPERS has received full copies of these audits. The testing and audits referenced above minimize the need for MPERS to conduct its own tests. MPERS will continue to monitor the testing and audits performed at LRS, MSHP, and MoDOT to ensure IT security is being continuously monitored at all three entities.*

*MPERS sent out a request for information (RFI) to interested vendors for the service of performing a detailed assessment of MPERS' IT architecture. Based on the information provided in response to this RFI, approval has been granted to go forward and develop a full Request for Proposal (RFP). The RFP will request a full assessment of the adequacy and completeness of the IT architecture, staffing, project management and IT general controls for MPERS, along with information on any potential control exposures and recommendations for improvements.*

## PRIOR YEAR RECOMMENDATION IMPLEMENTED

### Administration – Business Continuity Plan

We recommended the System consider developing a business continuity plan that specifically addressed how and when the System would become operational in the event of a disaster. The business continuity plan should be periodically checked for its validity and effectiveness.

Status: We noted a new pension administration system was implemented during 2010. The new system included a business continuity program for all processes that it handles. The System is currently drafting a Disaster Recovery and Business Continuity Plan.

*MANAGEMENT'S RESPONSE:*

*In early 2011, MPERS, in cooperation with LRS, completed our Business Continuity Plan, and conducted our first full test via a "mock event". The test demonstrated that MPERS could successfully process and execute our member payroll remotely through LRS in Springfield, Illinois, in the event a disruptive event took down our facility in Jefferson City. The Business Continuity Plan addresses the worst case scenario where MPERS is completely displaced from our facility, or, our software system and connectivity fails, or, staff resources are severely limited. Our most critical functions can be duplicated remotely using our electronic files that are backed-up on a daily basis.*

*In addition, MPERS has developed a DRAFT Disaster Plan setting forth in detail MPERS' disaster preparedness (pre-planning, resource identification, testing procedures), response (detailed steps to assure safety of employees and visitors, actions to limit and assess damages and re-establish operations), and, recovery (steps to return to normal operations and to restore facilities). The Disaster Plan and the Business Continuity Plan, together, provide a complete map and resource guide to manage disruptive events.*

*The only remaining task to complete the Disaster Plan is to identify and contract for a warm-site location in Jefferson City. Designating a warm-site will allow MPERS to temporarily relocate staff and our operations in Jefferson City in the event our facility is heavily damaged. MPERS is presently working with MoDOT (a plan sponsor) to designate a warm-site with associated resources in a MoDOT facility.*

We will be pleased to discuss these or any other matters deemed appropriate at your convenience. This report is intended solely for the information and use of the System's Board of Trustees, management, and others within the System and is not intended to be and should not be used by anyone other than these specified parties.

We thank System officials and employees for their assistance during the course of our audit and appreciate the opportunity to be of service.

Sincerely,

Williams-Keepers LLC

WILLIAMS- KEEPERS LLC